**REDUCED COMPLEXITY TRANSMIT SPATIAL WATERPOURING TECHNIQUE FOR MULTIPLE-INPUT, MULTIPLE-OUTPUT COMMUNICATION SYSTEMS**

## ABSTRACT OF THE DISCLOSURE

A waterpouring system and method for use with a multiple-input, multiple-output (MIMO) transmitter. In one embodiment, the waterpouring system includes an encoding decision subsystem that selects a constellation combination based on gains in channels of the MIMO transmitter, and a vector modulator subsystem, coupled to the encoding decision system, that modulates a fixed number of bits in a bitstream with the constellation combination to generate a symbol vector. The waterpouring system also includes a normalization and precoding subsystem, coupled to the vector modulator subsystem, that weights the symbol vector based on the gains to yield a weighted symbol vector and distributes the weighted symbol vector among the channels.